**WE CLAIM:**

1. A method of sealing a blood vessel, comprising the steps of:

providing a catheter including an elongate body, a pair of inflatable balloon members on the elongate body, and an electrode array on the elongate body between the balloons;

positioning the catheter within a blood vessel;

inflating the balloon members into contact with an interior wall of the blood vessel;

flushing blood from the portion of the blood vessel extending between the inflated balloon members;

energizing the electrode array to cause ablation of the interior wall of the blood vessel;

removing the catheter from the blood vessel; and

compressing the blood vessel, causing opposed ablated regions of the interior wall to seal against one another.

2. The method of claim 1 wherein a vacuum is applied to the portion of the blood vessel extending between inflated balloon members during ablation, said vacuum collapsing the vessel, thereby drawing the interior wall into contact with the electrode array.

3. The method of claim 2 wherein the catheter elongate body includes a plurality of openings, and wherein the vacuum is applied through the openings.

4. The method of claim 1 wherein a vacuum is applied to the portion of the blood vessel extending between inflated balloon members during ablation, said vacuum drawing moisture generated during ablation away from the tissue.

5. The method of claim 4 wherein the catheter elongate body includes a plurality of openings, and wherein the vacuum is applied through the openings.

6. The method of claim 1, wherein the flushing step includes flushing the portion of the blood vessel extending between the balloon members with saline, and aspirating blood and saline from the said portion of the blood vessel.

7. The method of claim 1, wherein the catheter elongate body includes a plurality of openings, and wherein the aspirating step includes applying a vacuum to the catheter to aspirate the blood out of the vessel through the openings.

8. The method of claim 1 wherein the electrode array is a bipolar array.

9. The method of claim 1 wherein the method further includes the steps of, prior to energizing the electrode array to cause ablation:

positioning the electrode array in contact with the interior wall of the blood vessel and measuring impedance of the tissue in contact with the electrode array; and

automatically selecting between a low impedance transformation circuit and a high impedance transformation circuit based on the impedance of the tissue in contact with the electrode array.

10. The method of claim 9 wherein the step of measuring the impedance of the tissue in contact with the electrode array includes providing a low-power RF signal to the electrode array.

11. The method of claim 9 wherein the step of selecting includes selecting the transformation circuit having an impedance closest to the measured impedance of the tissue in contact with the electrode array.

12. The method of claim 1 wherein the energizing step causes flow of current into the tissue, and wherein the method further includes the step of causing automatic termination of current flow into the interior wall once a selected ablation depth has been approximately reached.

13. The method of claim 12 wherein said termination occurs regardless of whether the electrode array continues to be energized.

14. The method of claim 1 wherein the removing step includes the step of collapsing the catheter into a reduced diameter step and withdrawing the collapsed catheter from the vessel.

15. The method of claim 14 wherein the collapsing step includes the step of applying a vacuum to a lumen in the catheter.

16. A device for sealing a blood vessel, comprising:

a catheter having an elongate body positionable within a blood vessel;

a pair of inflatable balloon members on the elongate body, the balloon members expandable into contact with an interior wall of the blood vessel;

an electrode array on the elongate body between the balloons;

at least one opening in the elongate body, between the balloons;

a source of flushing fluid coupled to the opening;

a vacuum source fluidly coupled to the opening, the vacuum source providing sufficient vacuum pressure to aspirate blood and flushing fluid out of the blood vessel through the opening; and

a source of ablation energy electrically coupled to the electrode array such that energization of the electrode array causes ablation of blood vessel tissue in contact with the electrode array.

17. The device of claim 16 wherein the vacuum source is further operable to draw the interior wall of the blood vessel into contact with the electrode array.

18. The device of claim 16 wherein the vacuum source is further operable to draw moisture generated during ablation away from the tissue and into the elongate body.

19. The device of claim 16 wherein the at least one opening comprises a plurality of openings in the elongate body.

20. The device of claim 16 wherein the electrode array is a bipolar array.

21. The device of claim 16 wherein the source of ablation energy includes an RF generator having a low impedance transformation circuit and a high impedance transformation circuit, an impedance detection circuit for measuring impedance of tissue in contact with the electrode array, and a control circuit for automatically selecting between the low impedance transformation circuit and the high impedance transformation circuit based on the impedance of the tissue in contact with the electrode array.

22. The device of claim 21 wherein the control circuit is for selecting the transformation circuit having an impedance closest to the measured impedance of the tissue in contact with the electrode array.